CHAPTER I

INTRODUCTION

This study presents an analysis of International Program on Science Education Students' Writing Text in a university in Bandung. The theory of scientific writing as proposed by by Halliday & Martin (1993), Martin & Veel (1998), Fang (2005), and Fang (2006), the theory text types in science as suggested by Martin & Rose (2008), Knapp & Watkins (2005), Anderson & Anderson (1997) and Transitivity System proposed by Halliday (1994) and Eggins (2004) are the framework of the study. This chapter is designated to cover the background of the study, the aim of the study, the significant of the study, and the scope of the study.

1.1 Background of Study

Writing takes part and gives much impact in ones' learning journey. It plays an important role in their successful learning (Emilia, 2011). It can also be an effective tool to promote student learning and engagement (Reynolds, et al., 2012). Moreover, student's writing skill becomes part of the center in higher education to fulfill certain purposes based on some various contexts in which it occurs (Coffin et al., 2003). One of the purposes is to enter particular disciplinary communities (Prior, 1998, as cited in Coffin et al, 2003) where the writing is specialized in certain situation and it has its own codes and conventions that students need to pay attention to if they want to be successful (Irvin, 2010).

In university level, there is a text called as academic writing. It becomes one of subjects taught in many disciplinary courses or programs in universities. Academic writing is always a form of evaluation that asks students to demonstrate knowledge and to show proficiency with certain disciplinary skills of thinking, interpreting, and presenting (Irvin, 2010; Bailey 2006). The forms are mostly factual texts such as explanation text, descriptive report, and discussion text (Anderson & Anderson, 1997; Martin & Rose, 2007). However, an academic writing often challenges students with its complexities, especially when the topic

is already difficult to understand as mostly occurs in academic scientific texts (Halliday, 1993; Gopen & Swan, 1990; Fang, 2005)

For some students, academic scientific texts are challenging to cope with. Firstly, those texts are found distinctive and difficult to read (Gopen & Swan, 1990; Halliday, 1993) because it has 'scientific language', a 'jargon' which makes the learners feel excluded and alienated from the subject-matter (Halliday, 1993). Secondly, re-presenting scientific information with highly complex terms would not be possible to be done with common words. Lastly, both native and non-native English speaker who learn science find similar difficulties (Halliday, 2004).

In relevance to the challenge mentioned earlier, the difficulties encountered by students are to do with the norms and conventions of their chosen discipline (Coffin et al., 2003), because there is an increasing demand in writing especially the ones related to ways of delivering and its intricacy in terms of grammatical features. Further, they also have to understand some technical terms dealing with the chosen field which have to be included in order to enrich the information in their text. However, it was stated that students who study science, often meet difficulties in applying appropriate grammar because when they learn science they also learn the language of science (Gopen & Swan, 1990; Halliday, 2003; Halliday, 2004; Fang, 2005; Martin & Veel, 2005; Lemke, 2010; Hodgson-Drysdale, 2014). In later years, students learn through language and the texts they encounter are increasingly abstract, technical, and metaphorical (Horarik, 2002), which adds more complexities in the process of writing.

Considering the difficulties encountered by the students, learning and understanding some crucial aspects in writing scientific texts e.g informational density, authoritativeness, technical terms, and abstraction (see Fang, 2005; Fang, 2006; and Martin, 1993) needs to be taken into account, thus, through such practice they can produce better writing. Additionally, according to Fang (2005), there is specialized grammar in scientific texts which enables its writer to present information with realization of the social context through systematic language.

Such specialized grammar can be unveiled through Hallidayan Systemic Functional Linguistic (SFL) Grammar analysis. The concept of the three metafunctions of language can point out clearly what is needed in the text, for example, the ideational metafunction assists writers how to present such an abstract information into something concrete and understandable without dwelling much on the technicalities. Moreover, SFL concept helps both teachers and students to understand how language is used to create meaning in science (Hodgson-Drysdale, 2014).

There is one research which analysed science student texts (Esch, 2003). It analysed Technical Science students' text with systematic thoroughness as the approach, which concluded that some students did not know what to sufficiently pay attention to or to identify how to produce good writing. The researcher also noted that further study in analysing text is needed to develop another teaching method which can help students to improve their writing skill. Therefore, this study is an attempt to fill the gap by using Halliday's theory of SFL, because it is strongly recommended as it gives the most impact on teaching writing (Wells, 1999).

According to the explanation above, this study is aimed to find students' ability in writing academic text by analyzing their text in terms of its schematic structure and linguistic features, and what are students' difficulties in the process of writing it. The findings will give insight to English teacher in teaching writing for academic purpose in any discipline, especially in teaching writing in Science Education. It also can give insight to some institutions in creating a syllabus in which English as the instructional language.

1.2 Research Questions

The study is conducted to answer the following questions:

1. How are the texts written by the International Program on Science Education (IPSE) students of a state university in Bandung in terms of its schematic structures and linguistic features?
2. What are the difficulties encountered by International Program on Science Education (IPSE) students in writing the texts?

1.3 Aims of the Study

Based on the research questions presented above, the study aims to:

1. Investigates the Report Texts written by International Program on Science Education (IPSE) students of a state university in Bandung in terms of its schematic structures and linguistic features
2. Identify students' difficulties in writing an academic text

1.4 Scope of the Study

This study is focused on analyzing the writing texts created by six International Program on Science Education (IPSE) students in one university in Bandung. The analysis is focused on three different parts. First, this study investigates the type of the text based on Martin & Rose's Genre Relation (2007). Second, it investigates the schematic structure and linguistic features of the texts by using Systemic Functional Linguistics which was developed by Halliday (1994), especially using Transitivity analysis. Third, it is also focused on identifying the difficulties faced by the students in writing their texts.

1.5 Significance of the Study

This study is expected to offer theoretical and practical benefits. Theoretically, this study is expected to enrich the literature on Systemic Functional Linguistics in analyzing students' writing, particularly scientific writing. Practically, the result of this study is expected to give insight to English

lecturer in teaching writing for Science Education, especially in teaching writing for International Program on Science Education (IPSE) students.

1.6 Clarification of Key Terms

In order to avoid misunderstanding or ambiguity, several terms are clarified as followed.

- *Genre* refers to different types of text that enact various types of social context (Martin and Rose, 2007). In this study, the types of texts used are the ones which mostly occur in science writing, such as Descriptive Text, Report Text, and Explanation Text suggested by Martin and Rose (2007).
- *Transitivity System* refers to Ideational metafunction, which is one of the metafunctions in Systemic Functional Linguistics (SFL). It also refers to how language or semantic part of language represents a phenomenon of real world (Halliday, 1994; Halliday & Matthiessen, 2004; Eggins 2004; Emilia, 2014).
- *International Program on Science Education (IPSE) Students*, are the university students on the second semester in their first year. They are majoring Science Education with English as the instructional language, and are expected to teach science in international school.

1.7 Organization of the Paper

The organization of the research paper is divided into five parts. The first one is the *Introduction*; it consists of the background of the research, the research questions, the aims of the study, the significance of study, clarification of terms, organization of paper, and concluding remark. The second chapter is *Theoretical Framework*. It presents the theoretical framework of the study. The third chapter is *Research Methodology*. It contains the design, the site and participants, the data collection, and the data analysis. The fourth chapter is *Finding and Discussion*. It elaborates the finding and discussions of data and the result of the study. The last is *Conclusions and Suggestions*. It presents the conclusion and suggestions which are given based on the elaboration and discussion of this study.

1.8 Concluding Remark

This chapter has discussed the background of the research, the research questions, the aims of the study, the significance of the study, clarification of terms, and the organization of paper. The next chapter will present the theoretical framework of the study.